

WHAT IS CLAIMED IS:

1. A gas generation system for providing a gas flow to be supplied to a reformer, comprising:
 - a reformer;
 - an evaporator for evaporating at least one component to be supplied to the reformer, thereby producing a gas flow comprising at least one carbon compound and water vapor; and
 - a normalizing stage connected between the evaporator and the reformer for equalizing the temperature distribution in the gas flow.
2. A gas generation system according to Claim 1, wherein the at least one carbon compound is a hydrocarbon or alcohol.
3. A gas generation system according to Claim 1, wherein the evaporator comprises several evaporation stages and wherein the normalizing stage is connected after the last evaporation stage.
4. A gas generation system according to Claim 1, wherein the normalizing stage is an adiabatic stage.
5. A gas generation system according to Claim 4, further comprising a temperature sensor disposed at an inlet or an outlet of the adiabatic stage for regulating a quantity of at least one of air and fuel to supplied to the adiabatic stage.
6. A gas generation system according to Claim 1, wherein the normalizing stage is a heat exchanger.
7. A gas generation system according to Claim 1, wherein the normalizing stage is a catalytically heated reactor.

8. A gas generation system according to Claim 7, further comprising a temperature sensor for regulating a quantity of at least one of air or fuel to be supplied to the catalytically heated reactor,

wherein the temperature sensor cooperates with a control unit that controls a control valve located in at least one of a supply line for air and for fuel, wherein the temperature sensor can be disposed on an inlet side of a gas flow or an outlet side of the gas flow of the catalytically heated reactor.

9. A method for providing a gas flow to be supplied to a reformer, comprising:

evaporating at least one component, thereby producing a gas flow containing at least one carbon compound and water vapor;

equalizing a temperature of the gas flow to be supplied to a reformer to a temperature range below the maximum allowable reformer inlet temperature, before the gas flow is introduced into the reformer.

10. A method according to Claim 9, wherein the at least one carbon compound is a hydrocarbon or alcohol.

11. A method according to Claim 9, wherein for multi-stage evaporating, the temperature of the gas flow is equalized after a last evaporation stage.

12. A method according to Claim 9, wherein said equalizing of a temperature of the gas flow is by an adiabatic stage.

13. A method according to Claim 12, further comprising regulating a quantity of at least one of air or fuel supplied to the adiabatic stage as a function of a temperature of the gas flow.

14. A method according to Claim 9, wherein said equalizing of a temperature of the gas flow is by a heat exchanger.

15. A method according to Claim 9, wherein said equalizing of a temperature of the gas flow is by a catalytically heated reactor.

16. A method according to Claim 14, further comprising regulating a quantity of at least one of air or fuel supplied to the catalytically heated reactor as a function of the temperature of the gas flow.

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